

Signal degrade (SD) propagation is provided for transparent mux/demux (T-Mux) systems to enable timely and more accurate performance monitoring and protection capabilities. A transparent node comprising two T-Muxs connected via a high-rate span between first and second sites common to a plurality of trib telecommunication systems provides continuity to all tribs and maintains the lower bit rate systems through the span. SD indicia, such as bit errors, on respective incoming trib signals at a T-Mux are accumulated over a relatively short fixed period. The SD information is encoded in a message byte and transported, alternately with a synchronization message, to the companion T-Mux in otherwise available signaling overhead. Upon receipt of the T-Mux message, for each trib signal, the downstream T-Mux generates a corresponding signal degrade condition on outgoing trib signals.